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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/058,337	01/30/2002	Kanna Aoki	1794-0148P	6134

2292 7590 09/10/2003

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EXAMINER

PERT, EVAN T

ART UNIT	PAPER NUMBER
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2829

DATE MAILED: 09/10/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/058,337

Applicant(s)

AOKI ET AL.

Examiner

Evan Pert

Art Unit

2829

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 19 June 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) 5-23 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 January 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

**DETAILED ACTION**

***Election/Restrictions***

1. Applicant's election of claims 1-4 "with traverse" in Paper No. 7 is acknowledged.

However, because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election WITHOUT traverse (MPEP § 818.03(a)).

Yet, the examiner is willing to consider rejoinder of non-elected claims if applicant identifies a specific error in the restriction requirement or presents an allowable generic claim.

At this time, claims 5-23 are withdrawn as being drawn to non-elected inventions.

***Information Disclosure Statement***

The IDS filed 4-12-02 is not in proper format because the authors have been omitted from the list of non-patent literature. The references cited and provided have been considered, while applicant is asked to provide an revised IDS for initialing.

***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Brown et al. (WO 96/29621).

Brown et al. discloses a 3D photonic crystal (cover) comprising a plurality of 2D plates (e.g. 3 of the 2D plates are visible in the cover) wherein these 2D plates are positioned respectively to be laminated (as seen in the cover along with textual description) so as to obtain a periodic structure in response to wavelengths of light (i.e. create the 3D "photonic crystal" to have a "photonic band gap").

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brown et al. as applied to claim 1 above, and further in view of Aoki et al. (IEEE paper presented on or before 7-19-01).

Brown et al. does not disclose "positioning members" and "spheres" in "through-holes" for alignment of the 2D photonic crystal plates, as is claimed in depending claims 2-4.

The article with first author Aoki (inventor) was presented before the foreign priority date of the instant application, rendering the article to Aoki et al. as qualified "prior art." Aoki et al. clearly teaches the alignment through-holes with spheres that are necessarily equal in diameter to the holes (i.e. 2 time radius), for accurate "alignment" Figs. 1-3].

Art Unit: 2829

It would have been obvious to one of ordinary skill in the art at the time of the claimed invention to have adopted the alignment members including spheres in through-holes, as is taught in the Aoki et al. presentation, in the invention of Brown et al..

One of ordinary skill in the art would have been motivated to use the through-holes and spheres as "positioning members" for Brown et al.'s 3D laminated photonic crystal, because these kind of alignment members taught by Aoki et al. allow for "accurate alignment of lattices...automatically no matter how complicated the lattice structure is." [p. 1-15, sentence bridging left and right columns].

### ***Conclusion***

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

The article entitled "The Almost Magical World of Photonic Crystals" to J.D. Joannopoulos is cited as a summary teaching of state-of-the-art in photonic crystals at the end of 1999.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Evan Pert whose telephone number is 703-306-5689. The examiner can normally be reached on M-F (7:30AM-3:30 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kammie Cuneo can be reached on 703-308-1233. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Application/Control Number: 10/058,337

Page 5

Art Unit: 2829

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 308-0956.

ETP

  
**EVAN PERT**